Measuring and Testing System for Powder Coatings

Quick and Easy Measurement of the Oven Temperature

Oven temperature data provides valuable information about the coating cure process, which is why recording and documenting the temperature in the oven is one of the most important tests carried out by powder coaters. A oven data logger makes taking measurements and capturing data easier.

The Elcometer 215 oven data logger and the ElcoMaster Oven Profiling Software package enable powder coaters to measure and record the temperature of the sample and of the oven reliably and precisely. The data collected provides information about the time taken to heat the component to the cure temperature and how long this temperature was maintained. By monitoring the oven temperature profile, the quality of the end product can be kept consistent or even improved.

The temperature measurements show that the required curing process has taken place in the oven and that the surface has the necessary properties.

Interaction of the measurement system, data logger and software

The solution developed by Elcometer, which consists of a data logger and a software package, has been produced with the aim of providing powder coaters with a robust system that can be used without a lot of background knowledge. The high temperature barrier kit allows the data logger to remain at a temperature of 250 °C for a period of up to 100 minutes. Six different probes can be connected to the logger simultaneously. Users can choose between surface or air probes with a clamp or a magnet.

The oven data logger is set up using the ElcoMaster Oven Profiling Software. The software stores the basic settings for the processes and these can be copied to the logger individually as required. This means that the same basic settings can be applied, regardless

The software allows the documentation to be customised and the oven profile reports to be combined with other measurement results.

of the user and of the job or curing process in question.

Storing powder types

The different powder types are also stored in the software. When users complete an oven measurement, they simply click on the powder that was used. The software evaluates the curing process at the click of a mouse and indicates whether the cross-linking temperature has been reached. This function ensures that the logger always has the same precise settings and that each powder is measured accurately in accordance with the manufacturer's specifications.

A report describing the curing process can easily be produced. The data file includes the coating type and the temperature curve, together with the duration of the drying process at the

maximum and minimum cross-linking temperature. It also lists the probes and the channel curves, the duration of the process and the probe positions. If required, the product data sheet, product images and graphics can also be incorporated in to the data file. All of this documentation can be produced within 30 seconds.

From an oven profile report to a full documentation package

Data can be imported and exported and can be shared through the "Cloud". This gives other employees access to the measurements, regardless of where they work. In addition, all the powder and device settings can be stored and retrieved by different plants and departments.

The software also offers the option of customising the documentation to meet individual requirements. For example, the oven profile reports can be combined with data from coating thickness, gloss and adhesion measuring devices to create a complete documentation package. This allows one central software program to be used for all the necessary tests. ■

Markus Biess

Elcometer Instruments GmbH, Aalen, Germany,
Tel. +49 7361 528060,
de_info@elcometer.de, www.elcometer.de